[redacted]

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	
ALLTEL Communications, Inc. Petition for Waiver of Sections 20.18(e) and (g) of the Commission's Rules	)	TRS No. 806258

To: The Commission

ALLTEL COMMUNICATIONS, INC. PETITION FOR WAIVER OF SECTIONS 20.18(e) AND (g) OF THE COMMISSION'S RULES

ALLTEL COMMUNICATIONS, INC.

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July 25, 2001

SUMMARY

ALLTEL Communications, Inc. ("ALLTEL") on behalf of its subsidiaries and affiliates serving as cellular and PCS licensees, seeks a limited waiver of the Commission's rules governing the timeframes for deployment of E-911 Phase II services. ALLTEL, one of the most experienced carriers providing CMRS services in the nation, has chosen an assisted GPS technology for Phase II compliance in its CDMA network due to its grave concerns over both the accuracy and availability of various network-based Phase II solutions. ALLTEL's technology choice and its concerns with network-based Phase II solutions were arrived at after detailed review of various vendors' solutions. These conclusions were duly reported to the Commission in ALLTEL's November, 2000 Phase II Technology Report.

ALLTEL, after thorough study, believes that a handset-based AGPS technology holds the most promise for providing the public safety community with the most accurate Phase II location data, and that no other solution can be implemented by the established deadlines that can meet the Commission's Phase II accuracy requirements. Given the current commercial unavailability of Phase II compliant AGPS software and equipment from ALLTEL's various network and handset vendors, ALLTEL requires a limited waiver of the deployment timeframes mandated by the Commission. ALLTEL does not at this juncture require a waiver of the accuracy requirements.

ALLTEL proposes a specific deployment schedule in support of its waiver request based upon the representations of its vendors. With respect to the deployment dates of Phase II network elements, ALLTEL seeks a waiver until: the end of 1Q 2002 for its Lucent switches; the end of 2Q 2002 for its Nortel switches; and the end of 4Q 2002 for its Motorola switches. With respect to handset deployment, ALLTEL seeks a nine-month deferral of each of the penetration benchmarks in Section 20.18(g)(1)(i), (ii), (iii) and (iv) in order to permit the handset market for AGPS assisted units to evolve for each of its significant handset vendors. ALLTEL fully expects to meet the December, 2005 deadline for 95% AGPS capable handsets within its network and seeks no waiver of this deployment deadline. ALLTEL also intends to deploy the AGPS Phase II network features in each of its switches according to the schedule established in the waiver regardless of whether a PSAP in the switch's service area is capable of receiving and utilizing the ALI data provided. ALLTEL also agrees to supply the Commission with quarterly updates on its Phase II compliance efforts as a condition to a grant of the waiver.

Grant of the waiver is fully justified. AGPS is, in ALLTEL's view and in the view of numerous other carriers, a superior ALI technology. The Commission explicitly provided for carrier waivers where, as here with respect to ALLTEL's situation, the necessary Phase II compliant network and handset components are not commercially available for deployment within the timeframes specified in the rules. ALLTEL has provided a specific deployment schedule for both handsets and network elements that demonstrates a realistic "roadmap" to full compliance. There are no other solutions commercially available that could be deployed in a faster timeframe and that provide the same degree of accuracy. The public interest would be served by a grant of the limited waiver request inasmuch as it would permit ALLTEL to deploy a more accurate ALI solution in furtherance of the Commission's mandate to protect the public safety through radio communications.

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ALLTEL COMMUNICATIONS, INC.
PETITION FOR WAIVER OF SECTIONS 20.18(e) AND (g) OF THE COMMISSION'S RULES

Pursuant to Section 1.3 of the Commission's rules, 47 C.F.R. § 1.3, ALLTEL Communications, Inc. ("ALLTEL")[1] petitions the Commission for a waiver of Sections 20.18(e), (g)(1) and, to the extent necessary, 20.18(g)(2) of the Commission's rules to implement assisted GPS ("AGPS") as its E-911 Phase II solution. ALLTEL's decision to implement the most accurate Phase II solution[2] warrants a deviation from the current deployment deadlines given the status of the technology and the availability of both necessary network upgrades and handsets. As demonstrated below, the limited and temporary waiver sought herein will serve the public

[1] The instant petition for waiver is filed on its own behalf and that of its various Commission-licensed subsidiaries and affiliates, including those licensee companies affiliated with ALLTEL Communications, Inc. by virtue of their common ownership and ultimate control by ALLTEL Corporation. A listing of these licensees is contained in Appendix A hereto.

[2] ALLTEL notes that the Commission's rules explicitly acknowledge the benefits of GPS assisted handset-based technology through the more stringent accuracy standard in Section 20.18 of the rules.

interest by permitting ALLTEL the latitude to provide its subscribership and the public safety community with the most accurate location data possible.

BACKGROUND

A. ALLTEL and its Network.

ALLTEL has more than 15 years of experience in providing its subscribers with innovative wireless services, including paging, cellular and PCS. While historically a predominantly rural carrier, ALLTEL has experienced explosive growth during the pendency of the Commission's E-911 rule making, resulting from its aggressive acquisition of markets across the country, including its merger with 360° Communications Company in 1998. ALLTEL has also acquired Nebraska-based Aliant Communications, Kansas-based Liberty Cellular, Louisiana-based Radiofone, Inc., and in mid-2000, consummated the transfer of cellular markets in 13 states from Bell Atlantic and GTE. These transactions provided ALLTEL with both a dramatically increased subscriber base and roaming access to a nationwide digital footprint covering 95 percent of the United States population. Smaller acquisitions in Alabama and Colorado have further expanded ALLTEL's geographic footprint.

ALLTEL now serves wireless communications customers in 22 states. The geographic coverage areas of the ALLTEL systems are diverse and include open rural areas, low-density suburban areas, as well as a handful of cities. ALLTEL's current network is comprised of equipment and infrastructure from multiple vendors due largely to the "legacy" systems obtained through acquisition as well as its internal procurement policies. Consequently, and in order to ensure network reliability, integration and interoperability among these diverse network elements is essential. Network reliability remains among ALLTEL's high priorities and rigorous testing

procedures are required prior to procurement and deployment of the new network upgrades supporting new services and functionalities.[3]

ALLTEL utilizes CDMA as its choice of digital technology and either provides digital service utilizing CDMA or is in the process of converting to CDMA across its entire network. ALLTEL is also implementing an ambitious migration of its network to ANSI-41 capability, a requirement for any J-STD-036 standard compliant solution as well as any AGPS solution.[4]

ALLTEL is committed to providing the best and most accurate enhanced 911 wireless telecommunications solutions over its entire subscriber base whenever and wherever a subscriber may be located within the geographically diverse coverage areas of ALLTEL's systems. Location technology continues to evolve[5] and ALLTEL seeks a limited waiver to deploy the most efficient, accurate and promising technology in a timeframe consistent with the commercial availability of technology from its vendors.

B. ALLTEL Has Thoroughly Evaluated E-911 Phase II Technology and Reported It's Technology Choice to the Commission.

ALLTEL engaged in intensive activities to identify applicable location technology, companies developing such technology, and to assess these technologies during the period of 1997 – 1999. Its initial technical assessment indicated that the majority of network-based

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[3] In this connection, ALLTEL notes that rigorous testing cannot begin without the availability of prototypes from vendors. It is essential, given the complexities of Phase II deployment, that each of the various network components and handsets from each of the various vendors be available for complete and definitive testing before network deployment. Hence, ALLTEL is constrained in its efforts to achieve compliance by the current unavailability of compliant equipment and upgrades from its vendors.

[4] ALLTEL notes that ANSI-41 is also a prerequisite to providing CALEA functions, another network upgrade which must take place generally within the same time frames currently established for the implementation of E-911 Phase II capabilities.

[5] Comments have recently been filed in CC Docket No. 94-102 proposing new and novel solutions utilizing the signal from HDTV towers.

solutions would only support the AMPS standard.[6] ALLTEL conducted further assessment activities through the CDMA Development Group ("CDG"), the SnapTrack CDMA Test Group as well as through frequent discussions with suppliers of location technology products. Activities within the CDG Location Technology Team included the creation of several test groups to evaluate the different location technologies available, as well as periodic meetings to discuss results and invite suppliers to provide updates on product development and test results. ALLTEL participated in each of the test groups. Beginning with an invitation in August 1998 to observe SnapTrack's field trial in Denver, ALLTEL participated in the SnapTrack CDMA Test Group to evaluate a handset-based solution using GPS. The result of these activities was aggregated in an internal ALLTEL report, the "Location Technology Assessment Report." In this report, technologies and products as then understood were assessed for potential E911 Phase II capabilities as well as the provision of commercial location services. Few comprehensive trial results were available as of year-end 1999 and, consequently, the assessment was largely qualitative in nature.

ALLTEL requested two vendors to perform location accuracy and coverage simulations for a sample market based on actual operating parameters. Although the specific results of these simulations are subject to nondisclosure agreements ("NDAs"), they formed the basis of the following findings. Qualitatively, it was expected that the near-far phenomenon-result in areas where a location fix is either unobtainable or severely degraded, as well as degradations due to geometric dilution of precision (GDOP) and near edges, would affect performance. Poor

[6] ALLTEL notes that the Commission is presently considering whether to delete the AMPS standard entirely from its rules.

geometry can lead to high GDOP,[7] such as in the case when base stations are placed along highways.[8] The resulting linear geometry creates a situation where small measurement errors lead to significant errors in location calculations.[9]

Based upon these findings, ALLTEL concluded that:

- The near-far effects of reverse link Time Difference of Arrival ("TDOA") technology result in location coverage holes.
- Cell sites located along traffic corridors resulted in reduced triangulation accuracy due to GDOP. GDOP is a general problem for reverse link TDOA solutions because the cellular network was designed to provide voice service, not location accuracy.
- Location accuracy suffers degradation near the edges of location coverage areas. This last effect has significant cost and timeliness implications in that the location coverage area must exceed the PSAP-served area in order to provide uniform location accuracy. To overcome this problem, a significant number of sites must be added that are not collocated with existing cell sites.

Since Angle of Arrival (AOA) techniques use directive antennas or antenna arrays to estimate the location,[10] ALLTEL never considered them as a widespread solution due in large measure to the difficulty in adding antennas to towers, such as environmental consequences,

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[7] See, T. S. Rappaport, J. H. Reed, and B. D. Woerner, "Position Location Using Wireless Communications on Highways of the Future," *IEEE Communications Magazine*, Vol. 34, No. 10, October 1996, at 38.

[8] See, S. Tekinay, E. Chao, and R. Richton, "Performance Benchmarking for Wireless Location Systems," *IEEE Communications Magazine*, Vol. 36, No. 4, April 1998, at 73.

[9] See, T. S. Rappaport, J. H. Reed, and B. D. Woerner, "Position Location Using Wireless Communications on Highways of the Future," *IEEE Communications Magazine*, Vol. 34, No. 10, October 1996, at 38.

tower loading and zoning. All network overlays also present problems when dealing with repeaters, microcells, and distributed antenna products.

Continuing its implementation efforts, ALLTEL initiated a comprehensive Request for Information (RFI) process in early February, 2000 that led to a Request for Proposals (RFP) in early August, 2000. ALLTEL distributed the RFI and RFP to the suppliers of network-based and handset-based solutions. A list of the suppliers that received and responded to these requests is provided below.[11] The majority of the suppliers of network-based solutions used TDOA with or without the combination of AOA to obtain location. Neither was able solve the problems identified in the technical assessment described above.

Company	RFI		RFP		Comments
	Received	Response	Received	Response	
Alcatel	Yes	Yes	Yes	Yes	
Audiovox	Yes	No	No	-	Response stated that Audiovox was actively investigating possible solutions.
Cell-Loc, Inc.	Yes	Yes	No	-	Not competitive with similar available solutions.
Compaq Computer Corp.	No	No	Yes	Yes	
Ericsson	Yes	No	No	-	Current offering was not interoperable with ALLTEL's existing network.
Grayson Wireless	Yes	Yes	Yes	Yes	

[10] See. S. Sakagami, S. Aoyama, K. Kuboi, S. Shirota, and A. Akeyama, "Vehicle position estimates by multibeam antennas in multipath environments," *IEEE Transactions on Vehicular Technology*, Vol. 41, February 1992, at 63..

[11] This listing does not reflect the numerous additional inquiries and requests that have been sent to handset vendors.

IDC	Yes	Yes	No	-	Not competitive with similar available solutions.
KSI	Yes	No	No	-	Did not respond due to pending acquisition by True Position.
LG Sansys, Inc.	Yes	No	No	-	No response received.
Lucent Technologies	Yes	Yes	Yes	Yes	
Motorola	Yes	Yes	Yes	Yes	
Nokia Mobile Phones	Yes	No	No	-	Response received late and did not address all questions.
Nortel Networks	Yes	Yes	Yes	Yes	
Qualcomm, Inc.	Yes	Yes	No	-	Referred some of questions to handset suppliers.
Radix Technologies, Inc.	Yes	Yes	Yes	Yes	
SigmaOne	Yes	No	No	-	Current offering was not interoperable with ALLTEL's existing network.
SCC Communications	Yes	Yes	Yes	Yes	
SignalSoft	Yes	Yes	Yes	Yes	
SiRF Technology, Inc.	Yes	No	No	-	Provided limited feedback.
SnapTrack	Yes	Yes	Yes	Yes	
Telcordia	No	No	Yes	Yes	
True Position, Inc.	Yes	Yes	Yes	Yes	
TSI (formerly GTE TSI)	Yes	Yes	Yes	Yes	
US Wireless Corp.	Yes	Yes	Yes	Yes	
XYPOINT	Yes	Yes	No	-	Not competitive with similar available solutions.

ALLTEL timely filed its detailed E-911 Phase II Technology Report ("Phase II Report") with the Commission on November 9, 2000. The Phase II Report notified the Commission of ALLTEL's decision to implement a handset-based solution using assisted GPS ("AGPS"). The

Phase II Report further detailed ALLTEL's concerns with the technical capabilities of various network-based solutions operating in the various environments in which ALLTEL's systems operate. [12] The Phase II Report detailed ALLTEL's extensive efforts up to that date, including the compilation of its comprehensive "Location Technology Assessment Report" that considered the various location technologies under development. As ALLTEL informed the Commission, "despite its best efforts, the availability of both network elements and handsets from vendors may prevent strict compliance" and "ALLTEL reserve[d] the right to seek such limited waivers of the Phase II deadlines as may be necessary to deploy the technology of its choice."[13] ALLTEL has continued to regularly solicit information from its vendors regarding product availability and to plan upcoming deployment as well as software and hardware testing. Given the responses obtained from its vendors, ALLTEL finds it absolutely necessary to obtain a limited waiver of certain of the Commission's rules to enable ALLTEL to deploy an AGPS solution, which in ALLTEL's view, best serves its customers' public safety needs while providing compatibility with ALLTEL's multi-vendor CDMA-based network infrastructure. In support of the waiver, ALLTEL has included a detailed deployment proposal including milestones and time frames leading to network-wide deployment of E-911 Phase II service.

I. LIMITED WAIVER BEST SERVES THE COMMISSION'S VITAL PUBLIC POLICY GOALS BY PERMITTING ALLTEL TO DEPLOY THE MOST ACCURATE LOCATION TECHNOLOGY WITHIN REALISTIC TIMEFRAMES.

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[12] ALLTEL Communications, Inc., E-911 Phase II Technology Report, filed in CC Docket No. 94-102, November 9, 2000. The Phase II Report is incorporated herein by reference. Other carriers have cited to ALLTEL's report as a basis for their own Phase II technology choices. See, Cingular Wireless LLC Request For Waiver of Sections 20.18(e)-(h) of the Commission's Rules (filed in CC Docket No. 94-102 on July 6, 2001)

[13] Phase II Report at 9 n.18.

ALLTEL will be unable to comply with the upcoming October 1, 2001 and certain subsequent deadlines for handset deployment and, hence, the provision of Phase II services in those markets subject to PSAP requests.[14] ALLTEL believes that other non-AGPS technologies do not adequately address the technical and regulatory compliance challenges presented by ALLTEL's diverse, and in particular, rural markets.[15] Rather, based on current vendor representations, it appears that the elements of such solutions will become available in various stages, depending on the vendor and the element, well into 2Q-3Q 2002. Strict enforcement of the Commission's rules and the *Fourth MO&O* can only be based upon the premise that Phase II ALI solutions are in fact readily available for all carriers. But, as demonstrated below, the unavailability of the required elements within the Commission's established timeframes requires that ALLTEL's seek to comply with the Commission's E-911 mandate in an alternative timeframe.

A. The Commission's Rules and Guidance for Waivers in the *Fourth MO&O* Are Premised on the Assumption that Multiple ALI Solutions Are Available or Will Be Available Shortly

[14] *See* 47 C.F.R. §§ 20.18(f), (g)(1)(i), (g)(2)(i). ALLTEL has received a number of requests for Phase II service which if valid would, under the Commission's rules, set the deadline for the implementation of Phase II service at or around the October 1, 2001 deadline for the initiation of handset deployment. ALLTEL notes that a number of these requests, either simultaneously or within close proximity in time, requested both Phase I and Phase II service. ALLTEL has no current intention to engage in the debate over whether various PSAP requests are *bona fide* or not under the Commission's current standards. Rather, ALLTEL seeks to work with each PSAP to develop rational deployment plans that reflect both the status and availability of the carrier's required network upgrades and the status of the PSAP's capability to both receive and utilize the enhanced ALI date provided through Phase II technology.

[15] Questions regarding the viability of network-based solutions in various applications continue to spark debate in this proceeding. Recent submissions by Nextel and Qwest further substantiate the conclusions reached by ALLTEL as to the superiority of the AGPS/Handset solutions for certain carriers. *See, Qwest Wireless, LLC and TW Wireless, LLC Amended Report On Enhanced 911 Phase II Implementation*, filed in CC Docket No. 94-102 on June 19, 2001.

In the *Fourth MO&O*, the Commission determined that "ALI technologies are already, or will soon be, available that provide a reasonable prospect for carriers to comply with the E911 Phase II requirements."[16] Citing primarily to reports from ALI technology vendors, the Commission concluded "the number of location technology providers present in the market should ensure that a choice of effective ALI solutions should be available to all wireless carriers."[17] The Commission speculated further that "[b]ecause this technology is evolving rapidly, and may be significantly affected by improvements in computer, semiconductor, and software technologies, as well as increased operational experience, actual performance for certain of the location technology solutions may well be even better by the time deployment is required next year."[18]

The Commission also acknowledged, however, that "it is possible that the plans and claims of some firms may prove overly optimistic."[19] Based on information provided by vendors and its analysis of vendors' various Phase II ALI solutions, ALLTEL believes that *no* E911 Phase II solution will be available to enable it to provide by October 1, 2001 Phase II service with the degree of accuracy delineated in the Commission's rules. Therefore, the Commission is not confronted here with a situation in which ALLTEL can readily "implement another solution that does comply with the rules."[20] Indeed, as discussed herein, even if the Commission were to require ALLTEL to implement a network-based solution, ALLTEL would still need to seek a waiver of the Commission's rules because the accuracy requirements would not be attainable.

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[16] *Fourth MO&O* ¶ 44.
[17] *Id.* ¶¶ 17-23.
[18] *Id.* ¶ 23.
[19] *Id.* ¶ 23.
[20] *Fourth MO&O* at ¶ 45.

B. Vendors Have Confirmed that Phase II-Capable Products Will Not Be Available Within the Timeframes Currently Mandated by the Commission.

ALLTEL has continually solicited its vendors for information regarding the availability of ALI-capable products for its chosen AGPS solution. Some vendors have been more forthcoming than others; but it is now clear that the deployment and/or the availability from vendors of the three primary elements of E-911 Phase II service -- switch upgrades, ALI-specific equipment, software, and facilities, as well as ALI-capable handsets -- will only become generally available in various stages from late 2001 throughout 2Q-3Q 2002.

1. Switch Upgrades

Regardless of whether ALLTEL selects a handset-based or network-based solution, the company must upgrade its switches to bring them into conformance with industry standard J-STD-036.[21] ALLTEL uses switching equipment from Motorola, Lucent, and Nortel in its various markets. ALLTEL has long-standing relationships with each of these manufacturers, each of whom is well established in the industry. Motorola is, however, ALLTEL's primary network and handset vendor. Based on information from ALLTEL's infrastructure vendors, the required software upgrades for their respective switches will become generally available *for testing* as follows (vendor letters are contained in Appendix B):

VENDOR	GEN. AVAIL.
Motorola	2Q 2002
Lucent	3Q 2001(September)

[21] Based upon current information from ALLTEL's vendors, the required switch upgrades include support for both network-based and handset based E-911 Phase II solutions. ALLTEL also notes that J-STD-36 was only approved in August, 2000, and that in its experience, and 18-24 month period is required between the adoption of an industry standard the general availability of standard compliant equipment.

Nortel[22]	4Q 2001(December)

It will take additional time to install, test and begin operation of the upgraded switch.[23] Therefore, and regardless of whether ALLTEL remains with its AGPS solution or instead opts for a network-based solution, the basic switch functionality required to enable ALLTEL to provide Phase II information to PSAPs in those markets served via Motorola and Nortel switches will be unavailable from the vendors in time to meet the Commission's current deadlines, and in particular for those PSAPs which have already requested Phase II service.

2. ALI Equipment, Software and Related Facilities

Implementation of an AGPS solution requires the deployment of positioning determination equipment ("PDE"), a mobile positioning center ("MPC"), and associated software and equipment in ALLTEL's switching facilities. ALLTEL has completed its architecture analysis in the planning phase for its Phase II solution and, assuming the availability of necessary equipment, ALLTEL anticipates receipt of the equipment to begin necessary testing (of its Lucent switches) during early 4Q2001 (see Project Plan at Appendix C hereto). Assuming (again) the availability of the equipment, ALLTEL anticipates immediate procurement and deployment of its Phase II network equipment in those markets where it has deployed Lucent switches by end of 1Q2002. In this regard, ALLTEL has announced a Phase II deployment trial

[22] Carriers are not the only E-911 stakeholders with strained resources. Nortel has stated in its letter that given aggressive PSAP implementation requests for Phase II service, the number of simultaneous requests may create the situation where carriers may not be able to respond to PSAP requests within the required FCC deadlines inasmuch as Nortel Networks can only accommodate a limited number of simultaneous carrier requests for Phase II provisioning.

[23] ALLTEL notes that it must conduct a First Office Application ("FOA") test for each of its three switch varieties prior to the widespread network deployment. After the FOA for each of its switch types, network deployment based upon PSAP request should proceed on an expedited basis.

to be conducted in the Jacksonville, Florida market during 3Q 2001 with the cooperation of its vendors and a local PSAP. ALLTEL understands that PDEs and MPCs will be available (testing and general availability) in the below timeframes.

ELEMENT	VENDOR(S)	TESTING	GEN. AVAIL.
PDE	Lucent	August, 2001	September, 2001
MPC	Lucent/SignalSoft	July, 2001	August, 2001

3. AGPS-Capable Handsets

Implementation of an AGPS solution requires the availability of handsets enabled with GPS-capable chipsets. ALLTEL's current vendors, with which it has existing long-term commitments beyond the provision of AGPS handsets are (in order of volume): (1) Motorola; (2) Kyocera; (3) Nokia; and (4) Audiovox. Despite the existence of these pre-existing relationships[24] with these vendors, ALLTEL has, in addition, regularly sought information from numerous other vendors regarding the projected availability of GPS-capable handsets, including Samsung; WIDE Telecom; Garmin International; LG Infocomm; Ericsson; and others. ALLTEL has established a monthly update process through which various vendors update the information on the availability of their handsets. An illustrative listing of ALLTEL's activities with handset

[24] Given ALLTEL's position as a mid-size carrier, the continued existence of these vendor relationships are essential to ALLTEL's continued viability as a carrier. ALLTEL's leverage with these vendors is based upon a "volume" relationship which permits handset purchases in
(continued on next page)

vendors and availability dates is contained in Appendix D. Below is a summary of the availability dates of ALLTEL's primary handset vendors:

Company	Test Units	Commercial	Chipset
Motorola	August 2002	Sept. 2002	Qualcomm MSM5100
Nokia	3Q 2002	December 2002	Nokia
Kyocera	Jan. 2002	June 2002	Qualcomm MSM5100
Audiovox	Nov. 2001	Jan. 2002	Qualcomm MSM5100

Table 1. Dates for GPS-capable handsets.

For ALLTEL's current vendors, GPS-capable handsets will be available for testing not earlier than November 2001, with commercial availability not earlier than 1Q2002.[25] ALLTEL understands that the majority of handset manufacturers are currently upgrading their handsets from second generation to third generation technology, and do not intend to incorporate chipsets supporting GPS into their current handset models, which are to be discontinued in the near term. ALLTEL further understands that manufacturers instead intend to incorporate chipsets supporting both GPS and 1XRTT third generation ("3G") technology (such as the QUALCOMM MSM5100 chipsets) into their upgraded models in various stages for commercial availability in 2002. Although one manufacturer[26] (Samsung) indicates that it will manufacture handsets with a GPS-capable QUALCOMM chipset (QUALCOMM MSM3300), the manufacturer insists on a

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quantities that produce the economies of scale necessary to compete on retail pricing of handsets against much larger carriers with far larger economies of scale.

[25] While ALLTEL must necessarily rely on the representations of its vendors, it nonetheless believes that these projected dates for availability are ambitious.

[26] ALLTEL understands that Kyocera now plans to make handsets (manufactured by Denso) that incorporate the Qualcomm MSM3300 chipset. Kyocera has not provided any information respecting the availability dates of these handsets to ALLTEL in response to ALLTEL's RFP,
(continued on next page)

minimum volume order which so far exceeds ALLTEL's requirements for its subscribership that, in the face of the advent of 3G capable handsets, it essentially would force ALLTEL to stockpile obsolete handsets for which there would shortly be no market demand. Meeting the unreasonable minimum order requirement would also be contrary to the subscriber's best interest inasmuch as they would be forced to aquire new handsets that will, in fact, be antiquated within a few short months.

ALLTEL supports the Commission's goals of expeditiously implementing Phase II service for AGPS/handset based solutions through "seeding" AGPS capable handsets so that Phase II service can become available to as broad a base of subscribers as possible. This laudable goal, however, must be achieved within the very real constraints placed upon carriers by an intensively competitive marketplace for CMRS services as well as the rapidly evolving technology and marketplace for handsets currently in process. Carriers must be permitted to implement an economically efficient handset deployment strategy that is consistent with evolving competition among vendors,[27] the carrier's particular technology, realistic deployment dates for Phase II network upgrades, and the existence of the pre-existing vendor relationships within which the carrier operates. Each carrier is different, and the point at which these considerations intersect establishes the most realistic timeframe for implementation.

ALLTEL is aware that one carrier proposing an AGPS solution has indicated that it will pursue handsets with the Qualcomm MSM3300 chipset.[28] That decision may be correct for that

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nor has Kyocera included any information on the availability of these handsets in its monthly update to ALLTEL.

[27] In this connection, ALLTEL notes that true competition has yet to come to the marketplace for AGPS chipsets for CDMA carriers, but is promised in the near future with the advent of Nokia's proprietary AGPS chipset.

[28] The handset vendor to be used by this carrier has not similarly communicated the details of availability for MSM 3300 equipped handsets to ALLTEL. See footnote 26, infra.

carrier in its particular circumstances – its PCS-only network is provided predominantly by Lucent which will have its network upgrades available considerably sooner than ALLTEL's most significant network vendor. But in ALLTEL's circumstances as delineated above, the QUALCOMM MSM3300 chipset would essentially be "stranded" technology and quickly eclipsed in a matter of months by the advent of the QUALCOMM MSM5100 chipset, for which ALLTEL ultimately anticipates brisk demand. Handsets using the QUALCOMM MSM5100 chipset would be available in most instances within the time frame proposed for the required network upgrades to achieve actual deployment of Phase II service.

C. A Network-Based Solution is Not Feasible for ALLTEL's Network

ALLTEL had submitted RFIs and RFPs to multiple ALI solution vendors in February and August 2000, respectively, in order to make its technology choice within the timeframe dictated by the Commission for the November, 2000 report. As discussed in the Phase II Report, "the responses from the RFI did not adequately address all of ALLTEL's concerns," and the subsequent RFP included supplemental "detailed questions about technical performance, interoperability, trial procedure and deployment as well as an update on current product status."[29]

ALLTEL requested detailed information about location technology for E911 wireless service from various vendors and in particular, information respecting accuracy, interoperability, availability and cost of equipment. It reviewed responses from several network-based solution vendors including Grayson Wireless, Cell-Loc, Radix Technologies, SigmaOne, TruePosition and US Wireless. Additionally, the requests included detailed questions about technical performance (including questions related to different radio propagation environment, multiple system support, traffic scenarios, etc.), trial procedure and deployment as well as updates on

[29] Report at 4.

current product status. A listing of ALLTEL's activities evaluating ALI technology is contained in Appendix E.

ALLTEL concluded that network-based solutions would not enable it to provide Phase II services in compliance with either the accuracy or the deployment deadlines, particularly for ALLTEL's sizeable rural geographic service areas.[30] As ALLTEL explained in the Report, base stations in rural areas are typically geographically dispersed and "link limited" in coverage. Due to the reverse link power control algorithm used in CDMA, it is difficult for the mobile signal to be received at three cell sites to achieve triangulation in such areas. In rural markets, cell sites also are typically built along traffic corridors, resulting in poor triangulation accuracy.[31] Given that ALLTEL's coverage areas include substantial rural and suburban areas, such solutions pose significant problems for ALLTEL customers.[32]

While vendors of network-based solutions have made little underlying test data publicly available, much of the testing these vendors has conducted has been in either very controlled environments or, even when conducted in conjunction with a wireless carrier (such as TruePosition's publicized testing with Verizon Wireless in Manhattan), in urban areas where there may be several cell sites in a single square mile.[33] A scenario in which a customer driving through a rural (or typical suburban area) is in range of two cell sites -- much less several -- is difficult to imagine. As discussed in its Phase II Report, ALLTEL conducted a technology

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[30] *See* Report at 5-6.

[31] *Id.* at 5.

[32] TruePosition, a network-based solution vendor, informed the Commission that "it is highly unlikely that network-based technologies in rural areas can satisfy the Commission's existing accuracy requirements for wireless E911 unless carriers are required to undertake very substantial expenditures for this purpose." TruePosition, E*x Parte* Presentation in CC Docket No. 94-102, July 24, 2000.

[33] U.S. Wireless's testing in Seattle appears subject to similar limitations.

assessment of various solutions, and asked two vendors of network-based solutions to perform location accuracy and coverage simulations for a sample market based on actual operating parameters. ALLTEL's assessment confirmed the shortcomings of the network-based solutions. Moreover, as noted in its Phase II Report, there remain unresolved questions concerning the interoperability between the network-based solutions and ALLTEL's multi-vendor architecture, which are *not* addressed when a solution provider does not test its product on a carrier's live network.

ALLTEL also made clear in its Phase II Report that additional tower sites and direction-finding antennas can not be easily deployed due to the environmental, zoning, cost and other factors that delay the construction and installation of necessary equipment.[34]

AT&T, during trials of network-based solutions, noted the substantial challenges associated with the use of AOA antennas, such as loading/capacity problems for some existing base stations as well as opposition and concern from property owners and zoning authorities.[35] In some cases where towers host multiple wireless carriers, the towers can not accommodate additional AOA antennas.[36] The Commission itself has recognized that such concerns would pose problems for carriers opting for network-based solutions.[37] For these reason as well,

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[34] Report at 5-6. Under its rules, the Commission as a matter of course requires that the environmental impact of cell site construction be considered. These considerations are of no less consequence should a license utilizing a network-based solution be required to construct additional sites in order to comply with the E-911 Phase II accuracy requirements. Yet, opposition to cell site construction continues to escalate. *See* USA Today, *Environmentalists try to block new wireless towers*, June 10, 2001, available at <www.usatoday.com/money/telecom/2001-06-11-environment.html>.

[35] AT&T Wireless Services, Inc., E-911 Phase II Report, filed in CC Docket No. 94-102, November 9, 2000 at 7-8.

[36] *Id* at 7.

[37] *See Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Third Report and Order*, 14 FCC Rcd 17388, ¶¶ 64-65 (1999).

ALLTEL determined, prior to submission of its Report, that a network-based solution would neither best serve its subscribers or otherwise ensure compliance with the Commission's rules – either as to implementation timeframes or accuracy.

ALLTEL, on the basis of the findings referenced in its Phase II Report, made a conscious business decision to reject the use of a network-based solution and, instead, to select a handset-based solution using AGPS for its Phase II deployment. The basis for that decision has not changed and ALLTEL has not actively considered implementing an alternative solution. ALLTEL has instead focused its finite resources on planning and implementation of an AGPS solution.

II. ALLTEL REMAINS COMMITTED TO AN ASSISTED GPS PHASE II ALI SOLUTION AND HAS IMPLEMENTED NUMEROUS STEPS TOWARD IMPLEMENTATION

ALLTEL remains strongly committed and focused on deployment of AGPS for its Phase II solution. It has held firm to this course rather than disperse its limited resources in the pursuit of continued testing and other opportunities with network-based solution providers.[38] For a mid-sized carrier like ALLTEL, soliciting additional proposals for, and continued pursuit of, alternative network-based solutions would simply have siphoned personnel and financial resources from deploying the AGPS solution it selected.

In this regard, ALLTEL has taken a variety of steps toward implementation of the AGPS solution. ALLTEL has conferred regularly with its leading vendors seeking a solution that will satisfy the FCC requirements for Phase II and to discuss development, performance and deployment issues. Initially, ALLTEL intended to test several solutions, but due to